Methods: A retrospective study from 530 osteoarthritic patients, treated with CS or NSAID was performed to determine the consumption of health resources. The results obtained were used in a cost-minimization model that compared both treatments, used at the recommended doses and regimens during a six-month period. Effectiveness and the incidence of adverse events were estimated from meta-analyses based on randomized clinical trials. Simple univariate sensitivity analysis was performed from the basic case.
Results: The overall six-month cost per patient treated with CS or NSAID was 144€ and 192€, respectively. If in the upcoming 3 years, the treatment of the patients currently treated with NSAID was replaced gradually in 5%, 10% and 15% by CS, the expected savings to the NHS during these 3 years would be over 45 million €. In addition, 2.666 cases of gastrointestinal adverse events (including 90 serious adverse events), as well as 5 myocardial infarction episodes, would be avoided for every 10.000 patients treated with CS instead of NSAID. Sensitivity analysis confirmed the strength of the basic case in all of the scenarios.
Conclusions: Chondroitin sulfate is a more efficient treatment for osteoarthritis, with less costs and better gastrointestinal tolerance, than NSAID.

322 THE NATURAL HISTORY OF PHYSICAL ACTIVITY UP TO TWELVE MONTHS AFTER PRIMARY TOTAL KNEE ARTHROPLASTY FOR OSTEOARTHRITIS

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Purpose: This prospective cohort study compared the natural history of physical activity (PA) over a 12-month period in 2 cohorts with knee osteoarthritis (OA), one undergoing primary total knee arthroplasty (TKA Cohort) and one not undergoing TKA (Non-TKA Cohort).
Methods: All patients were aged 45 years or older. Sociodemographic factors, clinical factors, and PA levels were assessed by structured interviews at baseline and at 3, 6, 9, and 12 months after TKA. Self-administered questionnaires assessed health status at baseline and at 6 and 12 months after TKA. Sociodemographic factors included gender, age, race/ethnicity, marital status, income, and education. Clinical factors included knee OA severity (Index of Severity for Knee Disease), knee pain intensity (Visual Analogue Scale), comorbidities (Charlson Index), and body mass index. The SF-36 and WOMAC were used to determine general and disease-specific health status, respectively. The Historical Leisure and Modifiable Activity Questionnaires were used to assess past-month total PA (leisure and occupational activity combined) at each time point. The season of the year when data were collected was also documented. Generalized linear models were constructed using a hierarchical method to identify significant predictors of total PA at time points for which all data were available (baseline, 6 months, and 12 months). A repeated measures mixed model approach determined the predictor variables in the final model.
Results: In the TKA Cohort, 83 (61.4% female) of 90 patients (92.2%) (mean±SD age 66.6±9.7 years) completed the study. Eighty-two (75.6% female) of 92 patients (89.1%) in the Non-TKA Cohort (mean age 68.6±10.4 years) completed the study. At baseline, the TKA Cohort was less educated, and reported greater disease severity and lower general health status than the Non-TKA Cohort. The TKA Cohort reported 24.3, 41.4, 46.2, 56, and 52.5 median MET-hours per week of total PA at baseline and at 3, 6, 9, and 12 months, respectively. The Non-TKA Cohort reported 37.4, 41.4, 43.1, 40.2, and 40.8 MET-hours per week at the same time points. Total PA in the TKA Cohort was lower at baseline ($p < 0.01$), similar at 3 and 6 months, and higher at 9 and 12 months ($p < 0.05$) than the Non-TKA Cohort. In unadjusted analyses, although total PA increased significantly in the TKA Cohort from baseline to 12 months, there was no change in the Non-TKA Cohort during the same time period. After adjusting for the effects of the other variables in the model, the predictors of greater total PA over the 12 months were male gender (regression coefficient b [% change] = 35.1%, $p < 0.001$), graduation from high school versus any other educational level (b ranged from −38.6% to −20.7%, $p = 0.02$), autumn season versus any other season (b ranged from −17.6% to 9.4%, $p = 0.005$), the ability to ambulate without an assistive device (b = 34.3%, $p < 0.001$), higher physical function (b = 0.82%, $p < 0.001$) and vitality (b = 0.59%, $p = 0.002$), and time since baseline (6 months b = 19.7%, $p = 0.003$; 12 months b = 15.9%, $p = 0.03$). Cohort status was not a significant predictor of total PA in the final model.
Conclusions: As far as we know, this was the first study to examine the natural history of PA after primary TKA for OA. As expected, individuals immediately prior to TKA had lower levels of total PA than those not having surgery. In the final model, total PA did not vary based on whether or not a person underwent TKA. In both cohorts, total PA increased by 19.7% at 6 months and 15.9% at 12 months as compared to baseline. Future studies could focus on tailoring PA interventions to people after TKA based on our knowledge of the natural history of PA.

323 THE RELATIONSHIP BETWEEN KNEE-SPECIFIC AND PERSON-BASED WOMAC PHYSICAL FUNCTION SCORES: DATA FROM THE OSTEOARTHRITIS INITIATIVE

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Purpose: In clinical trials of knee OA and imaging biomarker studies, physical function outcomes are often assessed for an index, or study, knee. The relationship between difficulty with physical activities attributed to a specific knee and the overall effect of both knees on the level of difficulty perceived by an individual has not been studied. We examined the relationship between bilateral knee-specific and person-based physical function assessed using the WOMAC function subscale.
Methods: Subjects were 133 men and women (52%) enrolled in the Osteoarthritis Initiative, mean (SD) age 61 (9.4) who were interviewed twice on the same day, once using a knee-specific ("... how much difficulty do you have due to pain, discomfort or arthritis in your right knee ...") and once using a person-centered version ("... due to pain, discomfort or arthritis in either of your knees ...") of the WOMAC physical function subscale (WOMAC™ Likert 3.1). One half of subjects were asked the knee-specific version first and, after at least one hour, were asked the person-based version, with this order reversed for the rest of the sample. We calculated a person-level difficulty score from the two knee-specific scores for an item in two ways, (1) taking the worse of the two knees and (2) taking the average for the two knees, then for both methods summing over items for a total score. We compared these two calculated total scores to the total score from the person-based version.

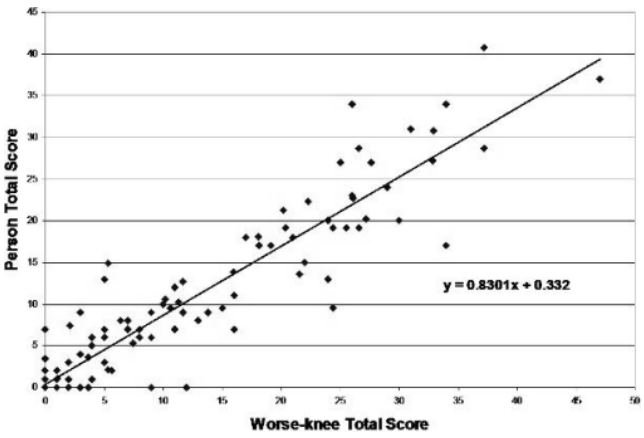

Table 1: Correlation of person-based function subscale scores derived from knee-specific vs. person versions

	All subjects	Subjects with some difficulty	Subjects with unilateral difficulty	Subjects with bilateral difficulty
Person score calculated using 'worse' of 2 knee scores for item	0.94	0.91	0.90	0.90
Person score calculated using mean of 2 knee scores for item	0.90	0.86	0.90	0.86

Results: 71% of participants had some difficulty in physical function on one or more WOMAC items. For a given item, relationships between the two knee-specific responses and the person-based response fell into several patterns. Of all nonzero response sets (some difficulty in either knee or at the person level), 14% indicated greater difficulty for both knees than for the person, 10% less difficulty for both knees than